

REMARKS

Upon entry of this amendment, claims 1, 2, 4-7, 9-12, 14-19, and 21-23 are pending. Claims 1 and 6 have been amended. Claims 13 and 20 have been canceled in this response, while claims 3 and 8 were previously canceled. Claims 21 - 23 have been added in this response.

Support for amendment of claim 1 appears at least at claim 1. Support for amendment of claim 6 appears at least at claim 6.

Support for new claims 21 and 22 appears at least at ¶0025. Support for new claim 23 appears at least at ¶0027.

No new matter has been added by way of this response.

Claim Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse and, for the following reasons, requests reconsideration and withdrawal of the rejection of claims 1-2, 4-7 and 9-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,949,312 to Kawakami et al. ("Kawakami").

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations; there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; and there must be a reasonable expectation of success. MPEP § 2143.

The present invention is directed to a three-element negative electrode active material composition, where the three elements are optimized as to identity and amount so as to provide for optimal structural stability, large discharge capacity, and distortion of the crystal structure of the composition. Claim 1 requires, inter alia, that the negative electrode active material comprise "a composition A-B-C containing a first element A, a second element B, and a third element C, wherein the first element A is copper or iron; the second element B is silicon; the third element C is at least one selected from the group consisting of indium, antimony, bismuth, and lead; and the composition A-B-C contains 5 to 40% by weight of the second element B and contains 1 to 50% by weight of the third element C".

Kawakami is directed to an electrode material composed of an amorphous tin alloy, of formula Sn.A.X , where $\text{Sn}/(\text{Sn}+\text{A}+\text{X})$ is 20 to 80 atomic percent. All embodiments of Kawakami are directed to the tin alloy Sn.A.X , and as such, all disclosed component content amounts pertain only to the tin alloy.

Kawakami do not teach or suggest all requirements of claim 1. Kawakami does not teach or suggest a composition A-B-C containing a first element A (copper or iron), a *second element B (silicon)*, and a third element C (at least one of indium, antimony, bismuth, or lead), as required by claim 1. Also, Kawakami does not teach or suggest composition A-B-C that contains 5 to 40% by weight of the second element B (silicon) and 1 to 50% by weight of the third element C (at least one of indium, antimony, bismuth, or lead), as required by claim 1. Kawakami's disclosure of $\text{Sn}/(\text{Sn}+\text{A}+\text{X})$ is 20 to 80 atomic percent is not applicable to the content requirements of claim 1 because it is pertinent only to the *tin* alloy of Kawakami.

Furthermore, there is no motivation or suggestion in Kawakami, or provided by the Office, to alter the anode material of Kawakami so as to reach the requirements of claim 1. As described above, Kawakami is directed entirely to a tin alloy composition. There is no motivation provided in Kawakami to substitute silicon for tin in an intermetallic alloy. As such there is no motivation to further alter Kawakami so as to reach the requirements of claim 1.

Because Kawakami does not teach or suggest all requirements of claim 1, and there is no motivation provided to alter Kawakami so as to reach all requirements of claim 1, such claim has not been shown to be *prima facie* obvious in light of the cited reference.

The above arguments apply equally to claim 1 and claims dependent thereon, such as claims 2, 4-5, and 14-19. The above arguments equally apply to claim 6 and claims dependent thereon, such as 7 and 9-12, to the extent these claims require a negative electrode active material containing composition A-B-C, where A is copper or iron; B is silicon; C is at least one of indium, antimony, bismuth, and lead; and composition A-B-C contains 5 to 40% by weight of B and 1 to 50% by weight of C. Furthermore, Applicants assert that newly added claims 21-23 are patentable over Kawakami.

It is noted that claims 2 and 7 have not been amended or changed in scope since the last response. As such, other amendments presented herein do not necessarily trigger issuance of a final Office action because, at least, the issue of patentability of claims 2 and 7 is not a new issue introduced by way of this response.

Claims 2 and 7 each require, inter alia, that the negative electrode active material comprises a composition A-B-C where "the first element A is copper, the second element B is silicon, and the third element C is at least one selected from indium and antimony" and "the composition A-B-C contains 5 to 40% by weight of the second element B and contains 1 to 50% by weight of the third element C". Kawakami does not teach or suggest a negative electrode active material composition with copper, 5-40% silicon, and 1-50% indium or antimony, as required by claims 2 and 7. The Office asserts that "with respect to claims 2 and 7, [Kawakami] teaches a negative electrode comprising A embraces copper because it includes any transition metal and C/X includes antimony" (Action of 8/9/06, p. 3, ln. 6-8). But the Office fails to explain how Kawakami teaches or suggests an alloy where B is silicon, as required by claims 2 and 7. As discussed above, Kawakami is entirely directed toward tin alloys of formula Sn.A.X. Furthermore, there is no motivation provided to alter Kawakami so as to reach the requirements of claims 2 and 7.

CONCLUSION

Applicant respectfully requests withdrawal of the rejections and believes that the claims as presented represent allowable subject matter. If the Examiner desires, Applicant welcomes a telephone interview to expedite prosecution. Applicant believes there are no fees due by way of this response. However, the Commissioner is hereby authorized to deduct any deficiency or credit any overpayment to Deposit Account No. 19-3140.

Respectfully submitted,

SONNENSCHN NATH & ROSENTHAL LLP

By: /Kevin W. Buckley/
Kevin W. Buckley
Reg. No. 45,901
Customer No. 26263
Telephone No. 314.259.5817

ATTORNEYS FOR APPLICANT